

AMENDMENTS TO THE CLAIMS

Claims 1-6 (Canceled).

7. (Currently Amended) An ECR plasma source comprising:

a microwave source;

a microwave inducing means connected to the microwave source;

a microwave transmitting means connected to the microwave introducing means;

a plasma generating chamber connected to the microwave transmitting means; and

at least one magnetic generation means having magnetic coils wound around the plasma generating chamber for generating the electronic cyclotron resonance (ECR) plasma and a plasma flow drawn from an opening of the plasma generating chamber,

~~a plasma generating chamber for generating a plasma using the electron cyclotron resonance (ECR) by microwaves and for drawing a plasma flow from an opening;~~

~~at least one magnetic generation means having magnetic coils wound for generating static magnetic fields in the plasma generating chamber; and~~

~~microwave introducing means for introducing the microwaves transmitted from microwave transmitting means, into the plasma generating chamber, wherein~~

~~the plasma generating chamber and the opening of the plasma generating chamber have generally rectangular sectional shapes normal to the direction of the plasma flow generated in the plasma generating chamber;~~

~~the magnetic coils of the magnetic generation means are wound in generally rectangular shapes in a plane normal to the direction of the plasma flow;~~

wherein,

the plasma generating chamber has generally rectangular sectional shapes,

the magnetic coils of the magnetic generation means are wound in generally rectangular shapes normal to the direction of the plasma flow,

the microwave introducing means includes a straight shape microwave cavity resonator which is terminated on one end portion of the straight shape microwave cavity resonator with a metal plate to form a terminal end portion having no opening, the other end portion of the straight shape microwave cavity resonator having a first opening formed by inserting a metal plate slit into the other end portion,

the end portion having the first opening is connected to the microwave source through a part of the microwave introducing means,

~~the straight shape microwave cavity resonator being disposed between a microwave source and the plasma generating member, and~~

~~between~~ the straight shape microwave cavity resonator has a terminal end portion having no opening and an end portion having ~~[[a]]~~ the first opening disposed at a distance of $n \times (\lambda_g/2)$ (n : an integer of 3 or more, λ_g : guide wavelength) from the terminal end portion, and ~~in the side of the straight shape microwave cavity resonator~~ the straight shape microwave cavity resonator, first resonance units having a length $\lambda_g/2$ (λ_g : ~~guide wavelength~~), but not having openings in a side, and second resonance units having a length of $\lambda_g/2$ and having at least one second opening in a side, are alternately arranged sequentially from the terminal end portion, two or more second resonance units being disposed in the straight shape microwave cavity resonator, and ~~so that~~ microwaves in phase from the second openings are introduced through the second opening into the plasma chamber through the microwave transmitting means.

8. (Previously Presented) An ECR plasma source as claimed in claim 7, wherein the microwave introducing means includes microwave branching means for branching and binding the microwaves transmitted from the microwave transmitting means.
9. (Previously Presented) An ECR plasma apparatus comprising the ECR plasma source as claimed in claim 8.
10. (Previously Presented) An ECR plasma apparatus as claimed in claim 9, comprising sample moving means; wherein a sample is irradiated at a generally rectangular area of a surface of the sample while being moved by the sample moving means.
11. (Previously Presented) An ECR plasma apparatus comprising the ECR plasma source as claimed in claim 7.
12. (Previously Presented) An ECR plasma apparatus as claimed in claim 11, comprising sample moving means; wherein a sample is irradiated at a generally rectangular area of a surface of the sample while being moved by the sample moving means.
13. (Previously Presented) An ECR plasma source as claimed in claim 7, wherein an opening is formed between the first resonance unit and the second resonance unit.